

## Assessment of Free Thyroxine as a Predictor of Mortality in Peritoneal Dialysis Patients: A Prospective Multicenter Cohort Study

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**Background and objectives:** Previous studies have suggested the association between thyroid hormones and mortality in dialysis patients. However, little is known regarding the association of free thyroxine and mortality in peritoneal dialysis (PD) patients. This study assesses the association between basal and annual variation of free thyroxine and mortality in PD patients.

**Design, setting, participants, & measurements:** Maintenance PD patients were enrolled from a prospective cohort study in Korea, to whom serum triiodothyronine, free thyroxine and thyrotropin were measured in 12 months apart. Patients with thyroid disease or thyroid hormone replacement were excluded from the analysis. All-cause, infection-related and cardiovascular-related mortalities were compared between the dichotomized two groups based on the median levels of free thyroxine. The association of basal levels and annual variation with mortality was investigated with Kaplan-Meier curves and Cox proportional hazard models.

**Results:** Among a total of 235 PD patients, 31 (13.2%) deaths occurred during mean follow-up period of 24 months. Infection (38.7%) was the most common cause of death. Patients with lower basal free thyroxine levels had significantly increased all-cause and infection-related mortalities than patients with higher levels. Kaplan-Meier analysis also showed worse cumulative survival rates in patients with lower free thyroxine levels ( $p=0.015$  and  $p=0.017$ , respectively). In multivariate analyses, lower basal free thyroxine levels were an independent predictor of all-cause and infection-related death (hazard ratio [HR]=3.201,  $p=0.0041$  and HR=14.592,  $p=0.0074$ , respectively). Longitudinally, patients with persistently lower free thyroxine levels during the 12-month period had significantly higher all-cause mortality than those having persistently high levels (HR=3.448,  $p=0.0269$ ).

**Conclusions:** Free thyroxine levels are an independent predictor of mortality especially attributable to infection in PD patients. This was consistent when considering both baseline measurements and annual variation patterns. Close attentions to infection in PD patients with relatively lower free thyroxine levels may improve the survival of patients.

**Key Words:** 유리 타이록신, 사망, 복막투석  
Free Thyroxine, Mortality, Peritoneal Dialysis